Amendments to the Claims

Claims 1 – 26 (canceled)

Claim 27. (original) A method of determining infection in a human patient by, or exposure of a human patient to, a mycobacterium which expresses ESAT-6 which method comprises the steps of:

(i) contacting a population of T cells from the patient with the peptide represented by SEQ ID NO: 1 and, optionally, one or more further peptides selected from the group consisting of the peptides represented by SEQ. ID. NOs. 2 to 11 and

(ii) determining *in vitro* whether the T cells of said T cell population recognise said peptide(s).

Claim 28. (original) A method of determining in a human patient infection by, or exposure to, a mycobacterium which expresses ESAT-6, said method comprising determining whether T cells of the patient recognise the peptide represented by SEQ ID NO: 1 and, optionally, one or more further peptides represented by SEQ. ID. NOs. 2 to 11.

Claim 29. (original) A method according to claim 27 or claim 28 wherein a peptide panel is employed consisting of, in addition to the peptide represented by SEQ. ID NO: 1, one or more peptides selected from the group consisting of the peptides represented by SEQ. ID. NOs. 2 to 11.

Claim 30. (original) A method according to claim 29 wherein at least the peptides represented by SEQ. ID. NOs. 1 to 8 are employed.

Claim 31. (original) A method according to claim 30 wherein one or more further peptides are employed selected from the group consisting of the peptides represented by SEQ. ID. NOs. 9, 10 and 11.

Claim 32. (canceled)

Claim 33. (currently amended) A method as claimed in claim 27 or claim 28 wherein any of said peptides is substituted by a peptide analogue which is at least ~~70% homologous, preferably at least 80% homologous, more preferably at least~~ 90% homologous~~,~~ to the entire corresponding substituted peptide and which retains the ability to be recognised by T cells of a T cell population which recognise the corresponding substituted peptide.

Claim 34. (currently amended) A method as claimed in claim 27 or claim 28 wherein any of said peptides is substituted by a peptide analogue which has one

or more end-terminal deletions ~~at the N-terminus and/or C-terminus~~ and which retains the ability to be recognised by T cells of a T cell population which recognise the corresponding substituted peptide.

Claim 35. (canceled)

Claim 36. (original) A method according to claim 27 or claim 28 in which the: recognition of the peptide(s) by the T cells is determined by determining secretion of a cytokine from the T cells.

Claim 37. (original) A method according to claim 36 in which IFN-γ secretion from the T cells is determined.

Claim 38. (original) A method according to claim 37 in which IFN-γ secretion from the T cells is determined by allowing secreted IFN-γ to bind to an immobilised antibody specific to the cytokine and then determining the presence of antibody/cytokine complex.

Claim 39. (original) A method according to claim 27 in which the T cells are: freshly isolated *ex vivo* cells from peripheral blood.

40. (original) A method according to claim 27 in which the T cells are pre-cultured *in vitro* with the peptide(s).

41. (original) A method according to claim 27 or claim 28 in which the mycobacterium is *M. tuberculosis* or *M. bovis*.

42. (original) A method as claimed in claim 29 wherein said peptides are pooled.

Claim 43. (original) A method as claimed in claim 27 or claim 28 wherein presence of a mycobacterium which expresses ESAT-6 is determined in a suspected healthy contact who has been exposed to say mycobacterium.

Claim 44. (currently amended) A kit for carrying out a method of determining infection in a human patient by, or exposure of a human patient to, a mycobacterium which expresses ESAT-6 comprising a peptide panel consisting of, in addition to the peptide represented by SEQ ID NO: 1, one or more peptides selected from the group consisting of the, peptides represented by SEQ ID NOs: 2 to 11, and optionally a means to detect the recognition of a peptide by the T cells~~.~~, the peptides of said peptide panel binding T cells indicative of infection with said mycobacterium in humans.

Claim 45. (original) A kit according to claim 44 wherein at least the peptides represented by SEQ. ID Nos. 1 to 8 are employed.

Claim 46. (original) A kit according to claim 44 wherein one or more further peptides are employed selected from the group consisting of the peptides represented by SEQ. ID. Nos 9, 10 and 11.

Claim 47. (canceled)

Claim 48. (currently amended) A kit as claimed in claim 44 wherein any of said peptides is substituted by a peptide analogue which is at least ~~70% homologous, preferably at least 80% homologous, more preferably at least~~ 90% homologous to the entire corresponding substituted peptide and which retains the ability to be recognised by T cells of a T cell population which recognise the corresponding substituted peptide.

Claim 49. (currently amended) A kit as claimed in claim 44 wherein any of said peptides is substituted by a peptide analogue which has one or more end-terminal deletions ~~at the N-terminus and/or C-terminus~~ and which retains the ability to be recognised by T cells of a T cell population which recognise the corresponding substituted peptide.

Claim 50. (canceled)

Claim 51. (original) A kit according to claim 44 which includes an antibody to IFN-γ.

Claim 52. (original) A kit according to claim 51 wherein said antibody is immobilised on a solid support and which optionally also includes a means to detect any antibody/IFN-γ complex.

Claim 53. (original) A method of determining infection in a human patient by, or exposure of a human patient to, a mycobacterium which expresses ESAT-6 which method comprises the steps of;

(i) administering one or more polynucleotides expressing in human cells the peptide represented by SEQ ID NO: 1 and, optionally, one or more farther peptides selected from the group consisting of the peptides represented by SEQ ID Nos: 2 to 11 and

(ii) determining whether T cells of the patient recognise said peptide(s).

Claim 54. (original) A method according to claim 53 wherein at least polynucleotides expressing in human cells the peptides represented by SEQ. ID. Nos. 1 to 8 are employed.

Claim 55. (original) A method according to claim 54 wherein one or more further polynucleotides are employed selected from the group consisting of

polynucleotides expressing in human cells the peptides represented by SEQ. ID. Nos. 9, 10 and 11.

Claim 56. (canceled)

Claim 57. (currently amended) A method as claimed in claim 53 wherein any of said peptides is substituted by a peptide analogue which is at least ~~70% homologous, preferably at least 80% homologous, more preferably at least~~ 90% homologous~~,~~ to the entire corresponding substituted peptide and which retains the ability to be recognised by T cells of a T cell population which recognise the corresponding substituted peptide.

Claim 58. (currently amended) A method as claimed in claim 53 wherein any of said peptides is substituted by a peptide analogue which has one or more end-terminal deletions ~~at the N-terminus and/or C-terminus~~ and which retains the ability to be recognised by T cells of a T cell populations which recognise the corresponding substituted peptide.

Claim 59. (cancelled)

Claim 60. (currently amended) A kit for carrying out a method of determining infection in a human patient by, or exposure of a human patient to, a mycobacterium which expresses ESAT-6 comprising one or more polynucleotides expressing in human cells a peptide panel consisting of, in addition to the peptide represented by SEQ ID NO: 1, one or more peptides selected from the group consisting of the peptides represented by SEQ ID NOs: 2 to 11~~.~~, the peptides of said peptide panel binding T cells indicative of infection with said mycobacterium in humans.

Claim 61. A kit according to claim 60 wherein at least polynucleotides expressing in human cells the peptides represented by SEQ. ID. Nos. 1 to 8 are employed.

Claim 62. A kit according to claim 61 wherein one or more further polynucleotides are employed selected from the group consisting of polynucleotides expressing in human cells the peptides represented by SEQ. ID. Nos: 9, 10 and 11.

Claim 63. (canceled)

Claim 64. (currently amended) A kit as claimed in claim 60 wherein any of said peptides is substituted by a peptide analogue which is at least ~~70% homologous, preferably at least 80% homologous, more preferably at least~~ 90% homologous~~,~~ to the entire corresponding substituted peptide and which retains the

ability to be recognised by T cells of a T cell population which recognise the corresponding substituted peptide.

Claim 65. (currently amended) A kit as claimed in claim 60 wherein any of said peptides is substituted by a peptide analogue which has one or more end-terminal deletions ~~at the N-terminus and/or C-terminus~~ and which retains the ability to be recognised by T cells of a T cell population which recognise the corresponding substituted peptide.

Claims 66 – 74 (canceled)

Claim 75. (original) A method of diagnosing infection in a human patient by, or exposure of a human patient to, a mycobacterium which expresses ESAT-6 which method comprises the steps of:

(i) contacting a population of T cells from the patient with a panel of peptides represented by SEQ. ID. Nos. 1 to 8, wherein said T cells are freshly isolated *ex vivo* cells from peripheral blood, and

(ii) determining *in vitro* whether T cells of said T cell population show a recognition response to said peptides by determining IFN-γ secretion from the T cells.

Claim 76. (original) A method as claimed in claim 75 wherein said panel is expanded to additionally include one or more further peptides selected from the group consisting of the peptides of SEQ. ID. Nos. 9 to 11.

Claim 77. (canceled)

Claim 78. (currently amended) A method as claimed in claim 75 wherein any of said peptides is substituted by a peptide analogue which is at least ~~70% homologous, preferably at least 80% homologous, more preferably at least~~ 90% homologous~~,~~ to the entire corresponding substituted peptide and which retains the ability to be recognised by T cells of a T cell population which recognise the corresponding substituted peptide.

Claim 79. (currently amended) A method as claimed in claim 75 wherein any of said peptides is substituted by a peptide analogue which has one or more end-terminal deletions ~~at the N-terminus and/or C-terminus~~ and which retains the ability to be recognised by T cells of a T cell population which recognise the corresponding substituted peptide.

Claim 80. (canceled)

Claim 81. (original) A method as claimed in claim 75 wherein said

peptides are pooled.

Claim 82. (original) A method as claimed in claim 75 wherein presence of a mycobacterium which expresses ESAT-6 is determined in a suspected healthy contact who has been exposed to said mycobacterium.